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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,287	05/15/2001	Arthur C. Coffey	7175-67882	1909

7590 07/14/2005

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EXAMINER
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CHANNAVAJALA, LAKSHMI SARADA

ART UNIT	PAPER NUMBER
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1615

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/855,287

Applicant(s)

COFFEY, ARTHUR C.

Examiner

Lakshmi S. Channavajjala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-9,14-18,27,28,30-37 and 39-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-9,14-18,27,28,30-37 and 39-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Receipt of request for reconsideration dated 9-14-04 is acknowledged.

Claims 1, 2, 6-9, 14-18, 27, 28, 30-37 and 39-45 are pending in the instant application.

The following rejections are of record:

#### ***Claim Rejections - 35 USC § 103***

Claims 1, 2, 8, 9, 14-18, 27, 28, 30-37 and 39-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,645,081 to Argenta and US 4,970,298 to Silver et al (Silver) in view of US 6,695,823 to Lina et al (Lina).

Instant claims are directed to a wound care bandage comprising a collagen matrix, a cover to seal the wound that is adapted for communication with a vacuum source, and a structure for placement between the collagen matrix and the wound cover. The collagen matrix in the instant claims is placed on the wound surface and integrates upon placement into the wound.

Argenta teaches a method of treating tissue damage in burns and wounds (abstract, col. 1, lines 55-65). The apparatus of Argenta comprises a vacuum means for creating a negative pressure on the area of tissue surrounding the wound, sealing means operatively associated with the vacuum means to maintain negative pressure on the wound and a screen means to prevent overgrowth of tissue in the wound area. The screen means comprises a section of open-cell foam, which is porous, configured to be placed over a wound, into which is inserted a flexible tube for attachment to a suction pump. The sealing means comprises a polymeric sheet above the foam section and tubing such that it is adhered to the skin surrounding the wound (col. 2, lines 15-28).

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Argenta teaches that the screen means is a semi-rigid structure and is directly connected to the vacuum source (col. 4, lines 29-60) and the screen means reads on the instant structure placed between the collagen matrix and the cover. Argenta teaches application of pressure in cycles in alternate periods of application and non-application (col. 3, lines 9-18). Further, Argenta teaches that the method of applying negative pressure enables increased blood flow into the wound area, reduces the bacterial infection in the area and thus enhances wound healing and (col. 3, lines 29-46), which is also claimed in the instant method claims.

Argenta lacks a collagen layer in contact with the wound, as in the instant claims.

Silver teaches a biodegradable matrix of collagen that is porous in nature and having a morphology that enhances the healing of a wound (abstract, col. 6, lines 10-29). Silver teaches that the collagen matrix can be formed into a sheet or a sponge having desired pore size (col. 4, lines 35-40). Silver teaches that the collagen based matrix has a swelling ratio of 2.5 to 5, which is required when it comes in contact with open wounds and can be used for placing in direct contact with the wound (col. 6, lines 30-46). Silver further teaches preparing collagen fibers that forms channels, which connect interior sponge to the pores (col. 8, lines 56-68). Silver teaches porous collagen for providing effective wound healing, but does not teach a wound dressing system with provided with a vacuum source as claimed.

Lina teaches a wound therapy device comprising a housing containing a vacuum pump and a chamber for holding a disposable fluid collection canister. The canister connects to an outlet with the vacuum pump at and at an inlet with a porous wound pad,

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which is placed over the wound. Upon activation of vacuum pump, wound fluid is drawn into the canister due to negative pressure (abstract, figures 10-16, col. 6, lines 1-14).

Lina refers to the teachings of WO 93/09727, which claims priority to the patent of Argenta (cited in this rejection) (see col. 1). Lina teaches that the development over the teachings of Argenta comprise that the pad is a biodegradable material having sufficient porosity, enabling the draining of the wound fluids. Further, Lina teaches that the pad made of polyurethane or polyether foam is porous and that the wound fluids are communicated through the inlet into the canister via the pad (col. 5, lines 40-45).

It would have been obvious for one of an ordinary skill in the art at the time of the instant invention to add porous collagen matrix of Silver, having a sufficient pore size, in the vacuum assisted therapy for wound healing of Argenta because Lina suggests that employing a biodegradable foam pad having pores of appropriate size on the wound and connect to a vacuum pump so as to drain the wound fluids without the problems of contamination and that a biocompatible pad is both compatible with vacuum, negative air flow and with healing tissue. In this regard, Silver teaches that collagen matrix is biodegradable, the biodegradability of which can be controlled, it can be prepared in the form of a sheet or a sponge, where the pore size of the sponge can be adjusted depending on the requirement and that the porous collagen has a swelling capacity that meets needs of absorbing the fluids from wounds. Accordingly, one of an ordinary skill in the art at the time of the instant invention would have incorporated a porous collagen in the vacuum assisted wound device of Argenta with an expectation to withdraw the wound exudates (including blood) in to collagen due its swelling capacity and porosity

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and that collagen integrates in to the wound over a period of time, owing to its biodegradability. Further, while neither reference teach the specific ring shaped structure of claims 14 and 32, Argenta teaches the same porous material and for the same purpose i.e., absorb exudates. Therefore, using an appropriate shaped structure of the pad, without altering the recognized function would have been within the scope of a skilled artisan.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,645,081 to Argenta and US 4,970,298 to Silver et al (Silver) in view of US 6,695,823 to Lina et al (Lina), as applied to claims 1, 2, 8, 9, 14-18, 27, 28, 30-37 and 39-45 above, and further in view of US 6,440,427 to Wadstrom.

The wound dressings of Argenta, Silver and Lina, discussed above, do not contain instant fibrin glue for holding collagen matrix.

Wadstrom teaches tissue treatment composition comprising fibrin or fibrinogen, and biodegradable polymers for wound healing or slow-release drug formulations etc (col. 1, lines 12-15). Wadstrom teaches fibrin is a known biological adhesive and is mixture of fibrin and thrombin that forms a coagulum (col. 1, lines 23-30). Wadstrom teaches fibrin sealants act in several ways, in hemostasis, glueing and wound healing. Further, Wadstrom teaches that fibrin sealants are used in a number of fields, especially for wound healing and prevention of adhesion of adjacent tissues (col. 3, lines 37-48).

It would have been obvious for one of an ordinary skill in the art at the time of the instant invention to use the fibrin sealant of Wadstrom in the wound dressing of Argenta,

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containing collagen of Silver because Wadstrom suggests that fibrin glue, due to its adhesive properties, is capable of atraumatically connecting tissues by forming a strong joint between them and adapts uneven wound surfaces, promotes the growth of fibroblasts, which in combination with efficient hemostasis and adhesion between the wound surfaces provides for an improved healing process. Further, Wadstrom teaches that the fibrin glueing effect is increased by fibronectin binding to exposed collagen (col. 1, lines 57 through col. 2, lines 15). Accordingly, one of ordinary skill in the art would have expected to increase the hemostasis and fibroblast growth at the wound-healing site, by placing fibrin glue close to the collagen layer in the wound dressing of Argenta.

### ***Response to Arguments***

Applicant's arguments filed 9-14-04 have been fully considered, particularly in view of the personal interview (also dated 9-14-04), but they are not persuasive. Examiner's response to Applicants' declaration dated 3-18-04 and the response to arguments regarding the teachings of Lina and Silver et al has been explained in the previous action. Applicants argue that examiner's characterization of Lina is incorrect as Lina teaches a biocompatible but not a biodegradable pad. It is argued that the teachings of Lina prevent the migration of granulation tissue into the pad and that the porous pad does not adhere to the healing tissue. Applicants' arguments have been considered but not found persuasive because while Lina does not teach a biodegradable pad, Lina does not teach away from a biodegradable pad. Further,

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instant claims recite the integration of collagen matrix as an intended use. It was also previously explained (during the interview dated September 14, 2004 and the in the office action dated June 27 2004 that the application of vacuum is not recited as positive limitation and accordingly, the argument the Lina does not teach a vacuum system with collagen is not persuasive. Silver et al provide the teaching of a collagen, which is a biodegradable and biocompatible matrix for effective in growth of tissue and wound healing. The teachings of Lina have been cited to show a combination of a porous biocompatible material together with a vacuum system for draining wound fluids and accordingly provide the motivation for a combination of a vacuum system (Argenta) and a porous collagen pad (Silver et al) such that the wound fluid is drawn through the porous material (collagen). Applicants argue that while the vacuum source is not positively recited in the bandage claims, such is not necessary for allowance, since the vacuum communication recitation is sufficient to provide an non-obvious relationship, since one would not provide a vacuum communication with a collagen pad as explained in the declaration. However, applicants arguments are not considered because if applicants arguments that a positive recitation for a vacuum source is required, then applicants arguments made in the declaration that one would not combine a vacuum source with a wound dressing are moot because as admitted there is no requirement that a vacuum source in the instant claims.



***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

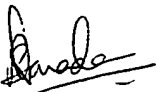
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lakshmi S. Channavajjala whose telephone number is 571-272-0591. The examiner can normally be reached on 9.00 AM -6.30 PM

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page can be reached on 571-272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lakshmi S Channavajjala  
Examiner  
Art Unit 1615  
July 5, 2005



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